SF Department of City Planning

COMMUNITY SAFETY PLAN

for THE COMPREHENSIVE PLAN OF SAN FRANCISCO

AS ADOPTED BY RESOLUTION NO. 7241 OF THE
SAN FRANCISCO CITY PLANNING COMMISSION SEPTEMBER 12, 1974

OBJECTIVES AND POLICIES

LIFE SAFETY

OBJECTIVE 1

REDUCE HAZARDS TO LIFE SAFETY, AND MINIMIZE PROPERTY DAMAGE AND ECONOMIC DISLOCATIONS RESULTING FROM FUTURE EARTHQUAKES.

Many existing structures in San Francisco may suffer considerable damage from a major earthquake; others may suffer little or no structural damage but could be functionally inoperative. The possibility of general structure failure presents great hazard to life safety, and the operational failure of structures such as hospitals or emergency operations facilities poses an even greater degree of hazard to the community at large.

It is not possible to prevent, control, or accurately predict the time of occurrence of earthquakes. It is, therefore, important to minimize hazards to life safety and property damage in existing and new structures relative to the degree of hazard present and importance of the structures to the well-being of the community.

POLICY 1

APPLY A MINIMUM LEVEL OF **ACCEPTABLE** RISK TO STRUCTURES AND USES OF LAND BASED UPON THE NATURE OF USE, IMPORTANCE OF THE USE TO PUBLIC SAFETY AND WELFARE, AND DENSITY OF OCCUPANCY.

It is not possible to eliminate all risks to life or property in areas of high seismic activity. Stringent construction standards could be applied to achieve a very low level of risk; however, these could result in unbearably high social or economic costs to the community.

The application of performance standards related to the degree of risk can result in a level of minimum risk appropriate to the use of each structure being considered. There has already been a public determination of a level of acceptable risk for schools and hospitals. This concept should be expanded to apply to all structures.

The determination of a level of acceptable risk should be based upon the importance of a structure to the general welfare of the community (such as hospitals), the hazard a particular use may present to the larger community (the storage of volatile goods), the intensity of use or the density of occupancy (such as theatres, schools, and office buildings or apartments); and whether exposure to risk is a voluntary or involuntary action (as in stores, convalescent hospitals, jails). The acceptable level of risk for each type of structure must ultimately be determined by the cost the community is willing or able to incur.

Public codes, especially the City Planning Code and the Building Code, regulate land uses and set minimum standards for construction of buildings and other structures. These codes provide for the general public health, safety, and welfare. Amendments, where necessary, should be made to these regulatory codes to incorporate requirements needed to effect levels of acceptable risk for all structures and uses. When feasible these amendments should be retroactive to serve as the basis for hazard abatement programs, especially for critical community facilities.

The following three classifications of criteria should be used to determine standards to achieve the minimum level of acceptable risk for all structures:

RISK LEVEL 1

- No structural collapse or mechanical failure that would cause the facility to be inoperative.
- Little or no damage to interior furnishings and equipment.
- Must be operational following a major earthquake.
- Applies generally to all structures which are critical community facilities, or whose failure would present great hazards to the community.
    - emergency operations facilities
    - emergency operations center
    - central radio station
    - central fire alarm station
    - Police Dispatch Headquarters
    - Fire Battalion District Headquarters
    - hospitals
    - water supply pumping facilities and reservoirs
    - gas or oil storage tanks
    - bridges
    - storage structures for essential public records.

RISK LEVEL 2

- No structural collapse or mechanical failure should occur that could cause loss of life.
- Mechanical systems may fail to operate but failure of mechanical or architectural elements such as light fixtures, pipes or ducts, suspended ceilings, or elevators should not cause loss of life.
- Failure of mechanical systems should be limited to that which can be quickly repaired with minimal outside assistance.
- Damage may occur to interior or exterior finishes or to contents of structures.
- Applies generally to structures of medium-to-high-density occupancy and structures whose use following a disaster might be desirable but not critical.

  - large stores
  - theatres and other places of public assembly
  - office buildings
  - large apartment buildings or complexes
  - large hotels
  - police stations
  - schools
  - jails and detention centers
  - dormitories
  - convalescent hospitals
  - water mains for potable and fire-fighting supply

RISK LEVEL 3

- No structural collapse should occur.
- Damage may occur to interior or exterior finishes, mechanical systems, or to contents of structure.
- Applies generally to low-density, voluntary occupancy structures of wood-frame, Type 5 construction for which there is no critical community need:

  - single-family homes
  - two-family homes
  - low-rise apartment buildings
  - warehouses
  - stores
  - industrial buildings

POLICY 2:

INITIATE ORDERLY ABATEMENT OF HAZARDS FROM EXISTING BUILDINGS AND STRUCTURES.

Existing hazardous buildings and structures represent a threat to the lives and safety of the community that should not be continued. Actions should be taken to identify these structures, and abatement of the hazards should commence at the earliest possible time. Priority for identification and abatement of hazards should be given to: (1) areas with high concentrations of potentially hazardous Pre-Code, Type C buildings; (2) areas with high population densities, and (3) those structures for which there is a critical community need.

POLICY 3:

ABATE EXISTING HAZARDS IN ALL CRITICAL COMMUNITY FACILITIES; WHERE IT IS NOT FEASIBLE TO ABATE HAZARDS IN EXISTING FACILITIES IN SPECIAL GEOLOGIC STUDY AREAS, MOVE THE FACILITIES TO NEW SAFER LOCATIONS; LIMIT LOCATION OF NEW FACILITIES TO SITES OUTSIDE SPECIAL GEOLOGIC STUDY AREAS UNLESS NO VIABLE ALTERNATIVE EXISTS.

Special attention should be given to the critical facilities that are presently in areas of potential ground movement or inundation hazard. If compensation cannot be made to assure their function, consistent with their community importance, they should be moved to new, safer locations.

Sites for new critical community facilities should be very carefully selected. The site selection process should seek to minimize hazards to the operation of the facility and the costs that are required for proper construction. To achieve this, priority for selection of sites should be given to locations outside of Special Geologic Study Areas. If sites within the special study areas would be especially advantageous, special engineering design should be included to assure that identified risks have been ameliorated.

POLICY 4:

REQUIRE GEOLOGIC AND SOIL ENGINEERING SITE INVESTIGATIONS, AND COMPENSATING STRUCTURAL DESIGN BASED ON FINDINGS, FOR NEW STRUCTURES IN SPECIAL GEOLOGIC STUDY AREAS, AND AS REQUIRED BY THE CITY ENGINEER FOR SITES OUTSIDE THE SPECIAL GEOLOGIC STUDY AREAS.

Special site investigations should be required in potentially hazardous areas designated as Special Geologic Study Areas to determine the actual hazard, if any, from proposed new development. The Special Geologic Study Areas include all areas of San Francisco in which one or more potential geologic hazard exists; Potential land movement hazards, potential inundation hazards, or both, may be present for any site within these areas. Based upon the findings of the site investigation, appropriate engineering design should be required to ameliorate the hazard. The findings of the site investigations should become public information. If proper engineering design is not technically or economically feasible, development of the site should not be permitted.

Increased concentration of people in areas of potential geologic hazards increases the possibility of injury or loss of life. Special evaluations must be made to determine the appropriateness for expansion of existing uses in the Special Geologic Study Areas. Only if determination is made that adequate safety, consistent with the levels of acceptable risk, can be assured should expansion be allowed:

POLICY 5:

THE PUBLIC SHOULD NOT BE LIABLE FOR NEW CONSTRUCTION IN AREAS OF KNOWN GEOLOGIC HAZARDS WHERE NO COMPENSATING STRUCTURAL DESIGN IS UNDERTAKEN.

In areas where geologic hazards are found to exist, either through knowledge gained from geologic events or through the results of site investigations, development which proceeds with knowledge of these dangers but without appropriate precautions should not be cause for liability on the part of the general public in the event of a disaster.

POLICY 6:

MODIFY PERMITTED LAND USES AND TYPES OF STRUCTURES, WHERE APPROPRIATE, ACCORDING TO GEOLOGIC FACTORS AND CONSISTENT WITH THE LEVELS OF ACCEPTABLE RISK.

Thorough integration of geologic factors into the regulation of land and structures should be made to further protect life and property and assure the most positive relationship between the geologic environment and the type and uses of structures.

POLICY 7:

REVIEW AND AMEND AT REGULAR INTERVALS ALL RELEVANT PUBLIC CODES TO INCORPORATE THE MOST CURRENT KNOWLEDGE AND HIGHEST STANDARDS OF SEISMIC DESIGN.

It is essential to the public safety and welfare that codes regulating the construction of buildings and structures incorporate the latest knowledge and standards for seismic design. As practical application of this knowledge becomes possible it should be incorporated into appropriate codes. In particular, action should be taken to amend codes relative to improved standards for design of lifeline systems, impact of geologic environments on land uses, and inclusion of anticipated ground shaking factors in standards for engineering design of buildings and structures.

POLICY 8:

SUPPORT SEISMIC RESEARCH THROUGH APPROPRIATE ACTIONS BY ALL PUBLIC AGENCIES.

Understanding of earth movement during strong earthquakes, and in turn the ways it affects structures, provides the means for improved design standards to better assure the public safety. For this reason the public interest is served through continuing and expanding research programs.

Public agencies should support existing seismic research programs and encourage new programs by appropriate actions in their area of responsibility. Particular efforts should be made to assure the expansion and continued maintenance of the strong-motion instrumentation program in San Francisco.

PRESERVATION

OBJECTIVE 2

PRESERVE, CONSISTENT WITH LIFE SAFETY CONSIDERATIONS, THE ARCHITECTURAL CHARACTER OF BUILDINGS AND STRUCTURES IMPORTANT TO THE UNIQUE VISUAL IMAGE OF SAN FRANCISCO.

The qualities that make San Francisco a special and unique city are many. One of those very important qualities is the style and design characteristics of the city's older buildings. Some of these date from the 1800's but most were built in the early 1900's. These buildings and structures, by present standards and knowledge of structural design, may present hazards to those who occupy them. While in the process of abating the hazards, special steps should be taken to insure that those features which significantly contribute to the special character of San Francisco are preserved.

POLICY 1

PRESERVE THE ARCHITECTURAL DESIGN CHARACTER OF BUILDINGS AND STRUCTURES SUBJECT TO REQUIREMENTS FOR ABATEMENT OF HAZARDS TO LIFE SAFETY.

The abatement of hazards to life safety will affect, primarily, the older structures in the city. Often the hazards presented by the structures are from those architectural design elements -- parapets, cornices, and other ornamentation -- that give each its own special character. In cases where remedial work is required to abate hazards from structures important to the character of San Francisco, every effort should be made by the owner and the City to assure the preservation of the architectural design of the structure. This should be accomplished through reinforcing, replacing or redesigning in similar architectural style, those building elements which present a life safety hazard.

EMERGENCY OPERATIONS

OBJECTIVE 3

ENSURE THE PROTECTION OF LIFE AND PROPERTY FROM THE EFFECTS OF FIRE OR NATURAL DISASTER THROUGH ADEQUATE EMERGENCY OPERATIONS PREPARATION.

Emergency operations planning and preparation are essentially preventive activities. The goals are saving lives, caring for the injured and re-establishing services that are essential to meet the immediate needs of the community. Although all critical emergency operations activities take place in the hours immediately after a disaster, the quality or success of these activities will be decided by the adequacy of pre-disaster planning and preparation.

POLICY 1

MAINTAIN A LOCAL AGENCY FOR THE PROVISION OF EMERGENCY SERVICES TO MEET THE NEEDS OF SAN FRANCISCO.

The key to effective organization for response to a natural disaster or any other emergency is the ability to accelerate and reinforce existing, practiced governmental functions. Effective emergency operations can take place only through coordination by a permanent public emergency services agency.

Emergency operations activities in San Francisco are the responsibility of the Mayor's Office of Emergency Services. This agency should be maintained and its capability expanded, as needed, to continue coordination of all emergency operations plans and activities. To assure adequate preparedness and operation capability, the agency should conduct, on a regular basis, all needed test exercises of the City's emergency preparations network -- emergency medical relief, emergency supply distribution, emergency communications capability and other services.

POLICY 2

DEVELOP AND MAINTAIN VIABLE, UP-TO-DATE IN-HOUSE EMERGENCY OPERATIONS PLANS WITH NECESSARY EQUIPMENT TO ASSURE OPERATIONAL CAPABILITY OF ALL EMERGENCY SERVICE AGENCIES AND DEPARTMENTS.

Agency and departmental emergency operations plans and standard operating procedures are essential elements of an adequate municipal emergency operations system. These plans designate who is to perform specific actions; without them there can be little or no operational capability. The preparation of these plans should be the responsibility of the individual department or agency. To assist them the San Francisco Office of Emergency Services should develop criteria and guidelines for the preparation of the plans.

POLICY 3

MAINTAIN AND EXPAND AGREEMENTS FOR EMERGENCY ASSISTANCE FROM OTHER JURISDICTIONS TO ENSURE ADEQUATE AID IN TIME OF NEED.

San Francisco is able to receive assistance from other political jurisdictions after a disaster through its participation in the State Mutual Aid program, whereby each local jurisdiction relies first on its own resources; then, in accordance with prior formal agreements, calls for help from higher political jurisdictions as needed.

Mutual Aid should, and legally can be, expanded to include agreements regarding the sharing of personnel, such as the staffs of other public works departments, as well as equipment.

Mutual aid assistance programs should be continued, and where appropriate expanded; and the necessary actions, to the point of State or local legislation, should be taken to assure this.

POLICY 4

ESTABLISH AND MAINTAIN AN ADEQUATE EMERGENCY OPERATIONS CENTER.

An Emergency Operations Center (EOC) is the protected, central facility to be used as a working base for directing and controlling emergency operations following a disaster. It should be a multi-purpose facility which houses the normal, day-to-day emergency services of the city -- police communications, fire alarm dispatch center, ambulance dispatch center and others -- and should be capable of being easily up-staffed in the event of a major disaster. It is the most important emergency operations facility.

POLICY 5

MAINTAIN AND EXPAND THE CITY'S FIRE PREVENTION AND FIRE-FIGHTING CAPABILITY.

San Francisco insures fire safety and is protected from conflagration by City Charter provisions, Building Code provisions, Fire Code provisions and standard City operating policies.

The water supply capability for fire-fighting relies on two separate systems: the Auxiliary Water Supply System (AWSS) and the domestic water supply system. The AWSS, a high pressure system, is the primary fire protection water supply for downtown San Francisco. Planned expansion of a single line of the system through the western, southern and eastern districts of the City, to create "fire break" capability in the event of a major conflagration should be undertaken as rapidly as possible. Where excavation takes place near the AWSS, all precautions should be taken to prevent the possible failure of the system during that period.

The domestic water supply system is used for fighting fires in all areas of the city not covered by the AWSS. Any expansion of the domestic water supply system should conform to the most advanced standards for seismic construction; and any opportunity for replacement of the older parts of the system should be taken.

The key to adequate water supply systems, and fire safety programs such as fire inspection, is regular on-going funding for equipment maintenance and programs. Funding for new equipment, fire houses and other capital expenses has consistently been provided in San Francisco; adequate funding should also be provided to assure high levels of maintenance of facilities and equipment and for fire prevention programs.

POLICY 6

ESTABLISH AND MAINTAIN A SYSTEM OF EMERGENCY ACCESS ROUTES FOR BOTH EMERGENCY OPERATIONS AND EVACUATION NEEDS.

If a major earthquake were to occur, debris from damaged buildings and other structures would clutter, and in many cases block, principal transportation routes. This is especially likely to happen in the Market - Van Ness - San Francisco Bay triangle area and south of Market Street. Routes made impassable by debris would limit access to key emergency operations facilities and sites, and would impair fire and rescue operations.

Primary and alternate emergency routes should be designated; selection criteria should include topography, geologic hazards, street widths, population density and potential inundation areas.

These emergency routes should serve both emergency access needs and the need for evacuation of areas subject to possible inundation from tsunami or reservoir failure. The routes to critical emergency facilities and sites will frequently differ from the routes which evacuate residents from a hazard area; thus the criteria for establishing these routes may also differ.

POLICY 7

PROVIDE CONTINUING PUBLIC EDUCATION REGARDING EMERGENCY PROCEDURES.

A comprehensive public education program regarding earthquakes and other natural hazards should be developed. It should provide information about the nature of earthquakes, about the many relatively simple and inexpensive precautions that can be taken before an earthquake to minimize individual injury and property damage, and about the kind of actions to take during and immediately after an earthquake to increase personal safety. Publicity through the media is important and continuing education and instruction should be undertaken through the public schools, Red Cross courses for adults, and programs with community groups and organizations.

RECONSTRUCTION

OBJECTIVE 4

ASSURE THE SOUND AND RATIONAL RECONSTRUCTION OF SAN FRANCISCO FOLLOWING A MAJOR DISASTER.

A major disaster resulting in extensive destruction of many parts of the city will result in a public and private commitment to rebuild San Francisco. The desire to rebuild as rapidly as possible will likely lead to overwhelming pressure to overlook established development objectives and procedures.

On a continuing basis, public regulations and policies have been instituted to further the development of San Francisco in a sound and rational manner. In rebuilding it is imperative that established life safety procedures be observed, and that reconstruction of the destroyed areas takes full advantage of the opportunity to effect improvements to the City.

POLICY 1

MAINTAIN THE SOUND AND RATIONAL DEVELOPMENT OF SAN FRANCISCO FOLLOWING A MAJOR DISASTER BY REBUILDING IN ACCORDANCE WITH ESTABLISHED COMPREHENSIVE PLAN OBJECTIVES AND POLICIES, APPROPRIATE CITY CODES, AND OTHER COMMUNITY CONCERNS AND NEEDS.

The Comprehensive Plan and numerous City codes have been adopted to assure the preservation, enhancement, and safety of this very desirable urban environment. Following a major disaster, the normal functioning of the City will be disrupted. In the efforts to restore the City, existing development policies and regulations must be enforced. The existing policies, regulations, and procedures should not be lessened or curcumvented in any manner as the result of pressures for rapid reconstruction.

In those areas that will be reconstructed the opportunity should be taken to realize the objectives and policies of the Comprehensive Plan. Particular opportunities may exist for residential and multiple use development; for needed changes or modification to transit and traffic ways systems; and provision of much needed public and private open space.

POLICY 2

ADOPT CONTINGENCY LEGISLATION TO PROVIDE FOR ANTICIPATED NEEDS FOLLOWING A MAJOR DISASTER, AND TO REDUCE PRESSURES FOR UNNECESSARILY RAPID RECONSTRUCTION.

New legislation will be required to meet the special needs of the City during the reconstruction period. Although it is essential that existing processes be observed during reconstruction, many special services and facilities will be needed on a short-term basis. Particular consideration should be given to legislation related to: provisions for temporary housing, commercial, and community facilities needs; appropriate amendments to the Planning Code, especially to limit reconstruction of nonconforming uses, establishment of priorities for the use of limited resources such as building materials and labor; and assurance of adequate staffing of City agencies to provide for community needs during reconstruction. Automatic expiration dates should be considered for all legislation enacted in response to reconstruction needs.

POLICY 3

CREATE A RECONSTRUCTION PLANNING COMMITTEE TO INSURE THAT DEVELOPMENT FOLLOWING A MAJOR DISASTER TAKES PLACE IN A TIMELY FASHION ACCORDING TO ESTABLISHED OBJECTIVES, POLICIES, AND PROCEDURES.

In order to minimize disruption of City functions, assure viable direction and coordination of reconstruction and expedite the sound and rational reconstruction of San Francisco an Advisory Reconstruction Planning Committee should be appointed. The charge of the Committee would be to formulate strategies and make recommendations for actions that should be taken in advance of and following a major disaster to appropriately guide reconstruction efforts. The Committee should be established at the earliest feasible time through joint action by the Mayor and the Board of Supervisors. The Department of City Planning should be responsible for the coordination of the work undertaken by the Committee.

Appointments to the Committee should include, but should not be limited to representatives of: the Mayor's Office; Board of Supervisors; Department of City Planning; Department of Public Works; Office of Emergency Services; Federal, State, and local governmental and private organizations providing (1) financial and legal assistance; (2) medical, housing, and social services; (3) engineering, planning, architectural and design services; and (4) transportation and transit services. The Committee should also include representatives of public utilities, business, labor and the construction industry.